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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,364	08/01/2000	R. Lawrence Ives	CALA-073100	6104

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EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 07/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.



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DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☒ Responsive to communication filed on 27 Feb 2002 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), \_\_\_\_\_ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948.       |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449       | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474      | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-26 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-7; 8-24, 25, 26 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☒ The corrected or substitute drawings have been received on 27 Feb 2002. These drawings are ☒ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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The disclosure is objected to because of the following informalities: Page 16, line 16, note that "through" should be rewritten as --, 4B and-- and "is are" is vague in meaning; line 17, note that --, respectively-- should be inserted prior to "through". Page 20, lines 3, 4, are "MAFLA" and "XCUN" considered trademarks which need to be properly designated? Page 21, line 5 and page 22, line 14, note that "4a-c" should be rewritten as --4a-4c-- at each occurrence. Page 22, line 14, note that --respectively-- should follow "c-c". Page 24, line 20, note that --(not shown)-- should follow "180" and "170", respectively. Page 25, line 9, note that it is unclear whether "auxiliary coil 180" is proper since label "180" already designates another coil.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that in the detail description of the drawing figures, all labeled features need to be explicitly described in the specification description of each figure. Furthermore, if the specification description references more than one drawing figure, labeled features need to be reference to the figure(s) in which they actually appear.

Appropriate correction is required.

The drawings are objected to because of the following: In fig. 4, reference label --106n-- needs to be provided; In fig. 4a, reference label --174-- needs to be provided; In fig. 6a, reference labels (102, 106) need to be provided. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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The amendment filed February 27, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: At page 21, line 6, the change from "n=7" to --n=8-- does not appear to be supported by the original specification. Likewise the corrections in Figs. 4a, 4b, 4c from seven to eight electron beam passages does not appear to be supported by the original disclosure.

Applicant is required to cancel the new matter in the reply to this Office Action.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The oscillator and amplifier of claim 25, 26 need disclosure in the specification.

Claims 6, 7; 8-24, 25/8, 26/8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, note that it is unclear which one of the plurality of electron beams is intended by the recited "said electron beam".

In claim 8, note that "a minimum separation distance ... of a separation distance D" appears to be a redundant recitation of the same feature. Also, note "electrodes" should correctly be --electrons--.

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In claims 9-14, 16, 17, 21-24, note that it is unclear which one of the "one or more field correctors" is intended by the recited "said field corrector".

In claim 15, note that "said coil" is indefinite for the dependency from claim 11 since "first and second" coils are recited therein, and "said correction field" is not definite since only claim 12 has defined a "correction field".

In claims 16, 17, 19, 20, note that reference to a "permanent magnet" or "non-magnetized iron" being the "field corrector" is improper since these claims depend from claims which already define the field corrector as a "coil".

In claims 18, 19, 20, note that the recitation of "at least one (correction coil/corrector)" is not consistent with the single correction coil/single corrector recited at least in claims 9, 10, 12, from which these claims depend.

In claim 18, note that "a coil of current carrying wire" appears to be a redundant recitation, especially in view of claim 12.

In claim 21, note that "main" should be --central-- and the relative terms "smaller" and "larger" are vague in meaning (e.g. smaller than what?).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-3, 5, 25/1 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nevins, Jr. or Tran et al.

Both Nevins Jr. and Tran et al disclose a multiple beam RF device having a housing aligned along a longitudinal axis (e.g. x-x' in Tran et al) and including beam tunnels (e.g. 36 in Nevins Jr.). Each beam tunnel includes a sequence of drift tubes (e.g. 34 in Nevins Jr; 4 in Tran et al) and drift tube gaps between adjacent drift tubes parallel to the longitudinal axis. A plurality of electron guns (16 in Nevins Jr.; 1 in Tran et al), a plurality of anodes (22 in Nevins Jr; 2 in Tran et al), and a plurality of focussing electrodes (e.g. 20 in Nevins, Jr.) Are provided. Also provided is a substantially constant magnetic focussing field generated by a surrounding magnetic structure (10 in Nevins, Jr; 5 in Tran et al) for confining electron beam flow. Moreover, note that the drift tube gaps inherently are capable of introducing or removing RF energy as needed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Nevins, Jr. or Tran et al.

Regarding claim 4, the use of iron as a housing material would have been an obvious selection of a conventional housing material for an electron beam device.

Regarding claims 6, 7, the degree of magnetic field needed for magnetic field focussing would have been obvious optimization dependent upon desired magnetic field conditions known to those of ordinary skill in the art.

Claims 8, 12, 14, 15/12, 18/12, 20/12, 25/8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mourier in view of either Nevins, Jr. or Tran et al.

Mourier<sup>8</sup> comprises a magnetic focussing arrangement suitable for use in multi-beam electron devices (e.g. multi-beam Klystrom) comprising two disks (20, 22) having apertures (A, D, A', D') therethrough for the passage of plural electron beams (10). A magnetic structure (24) provides for primary focussing of the electron beam (10) in the region between plates (20, 22). Because of electron drift between the plates (20, 22) as shown in Fig. 1, an auxiliary magnetic correcting structure (30) including current carrying coils (36, 38) is provided to correction due to electron drift through use a correction magnetic field. Alternative magnetic correcting structure (30) may comprise a ferromagnetic part (48) such as iron as depicted in Fig.6. Mourier<sup>8</sup>, thus

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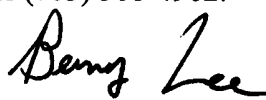
differs from the claimed invention in that the specific structure of the claimed multi-beam device is not disclosed therein.

Both Nevins, Jr. and Tran et al disclose a multi-beam electron device having the specific structure as claimed.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the multi-beam electron device of Mourier with either multi-beam electron device of Nevins, Jr. or Tran et al. Such a modification would have been considered obvious since the generic nature of the multi-beam electron device of Mourier would have suggested that any equivalent multi-beam electron device (such as in Nevins Jr. and Tran et al) would have been usable therewith, thereby suggesting the obviousness of such a modification. Furthermore, as an obvious consequence of such a modification, the resultant multi-beam device would have functioned as an oscillator, as taught by either Nevins Jr. or Tran et al.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umehara et al and Miram et al pertain to magnetic adjustment of the electron beam focussing.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-4902.

  
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